

STATE OF UTAH DIVISION OF WILDLIFE RESOURCES

CACHE VALLEY HUNTER EDUCATION 300 YARD RANGE DESIGN

MANAGED BY:

DIVISION OF FACILITIES CONSTRUCTION AND
MANAGEMENT

DFCM PROJECT # 06048520



State of Utah—Department of Administrative Services

DIVISION OF FACILITIES CONSTRUCTION
AND MANAGEMENT

4110 State Office Building/Salt Lake City, Utah 84114/538-3018



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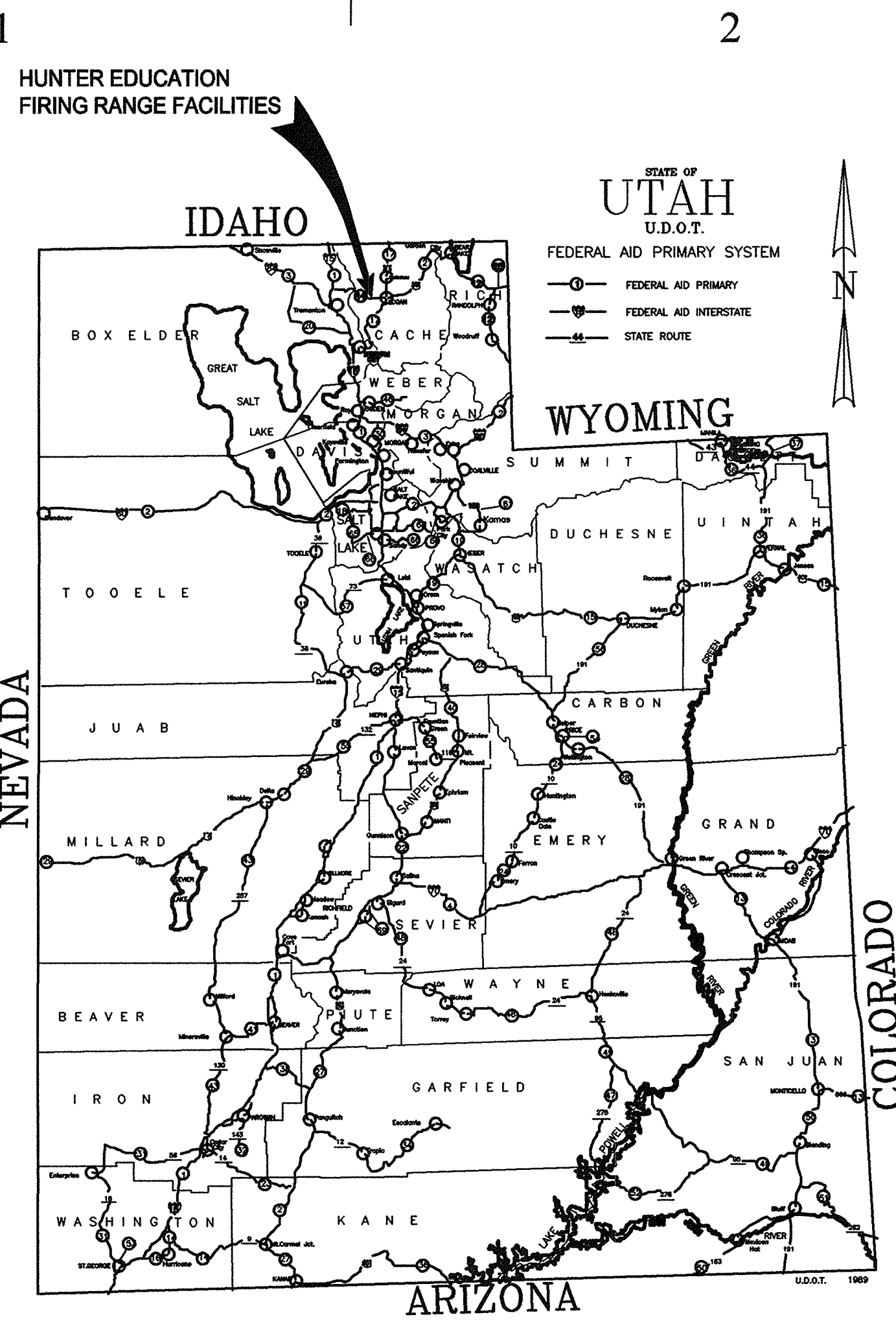
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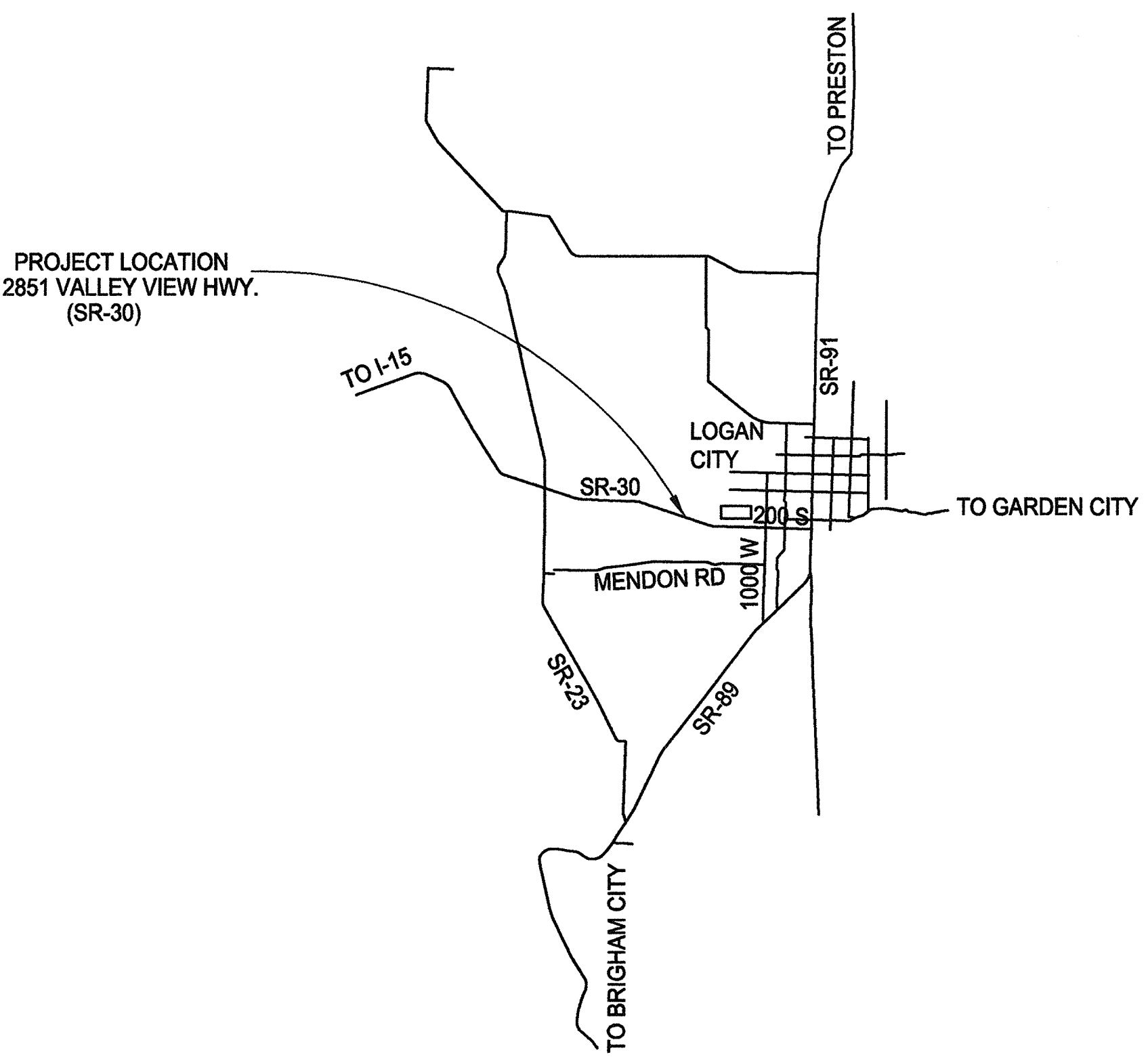
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AUGUST 2006





LOCATION MAP
N.T.S.



VICINITY MAP
N.T.S.

DRAWING INDEX

GENERAL

G-001 COVER SHEET
G-002 LOCATION AND VICINITY MAP, INDEX SHEET

CIVIL

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C-501 DETAILS
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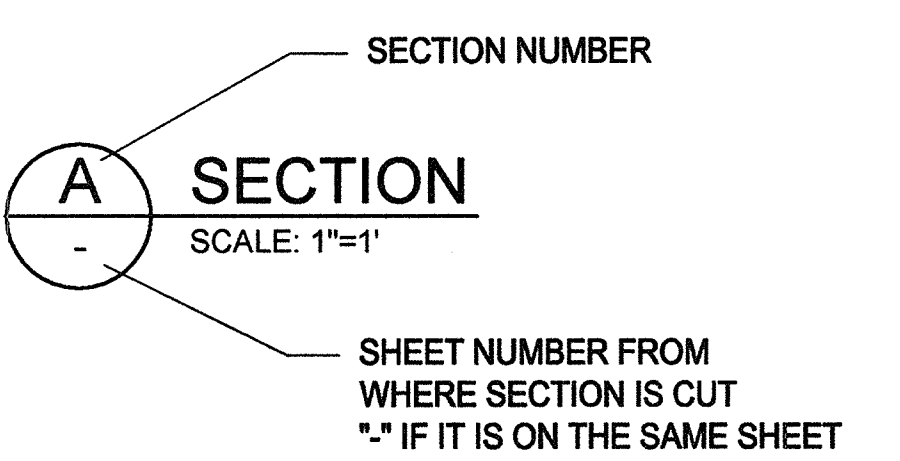
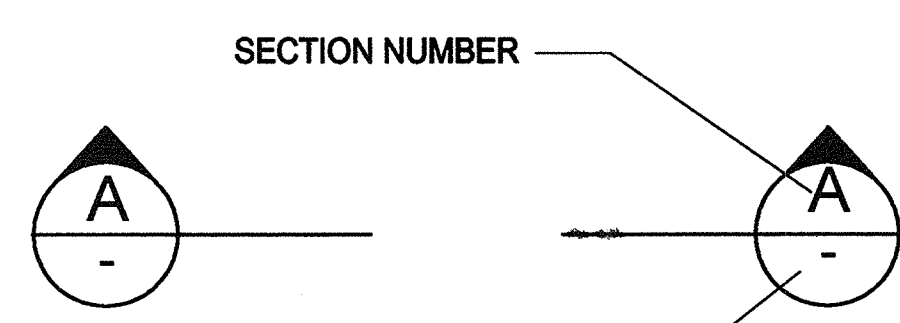
ELECTRICAL

E-001 ELECTRICAL NOTES, SCHEDULES
E-101 ELECTRICAL PLAN

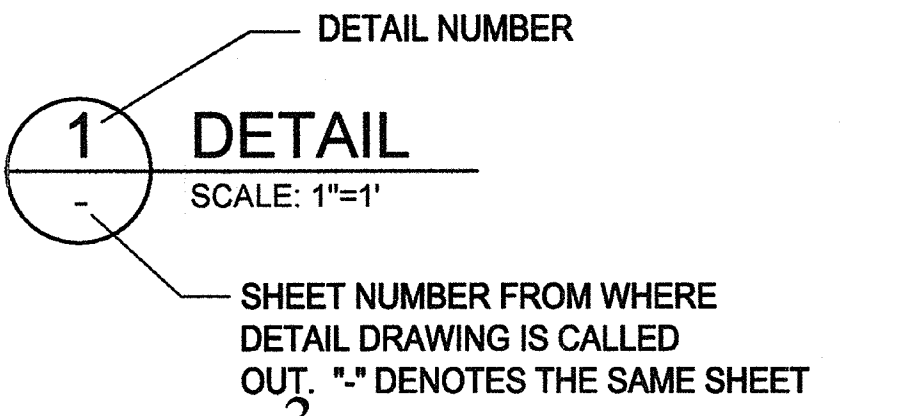
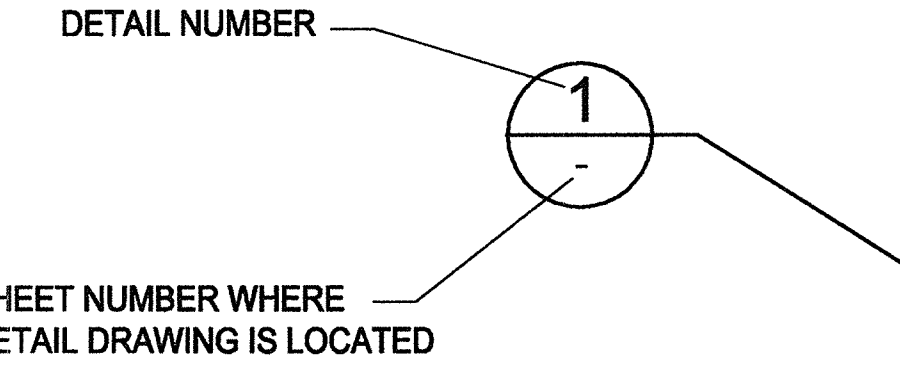
SECTION AND DETAIL IDENTIFIERS

NOTE:
A DASH MAY BE PLACED IN THE LOWER PORTION OF THE IDENTIFIER IF THE DETAIL DRAWING OR SECTION VIEW IS LOCATED ON THE SAME SHEET.

SECTION IDENTIFICATION



DETAIL IDENTIFICATION



ABBREVIATIONS

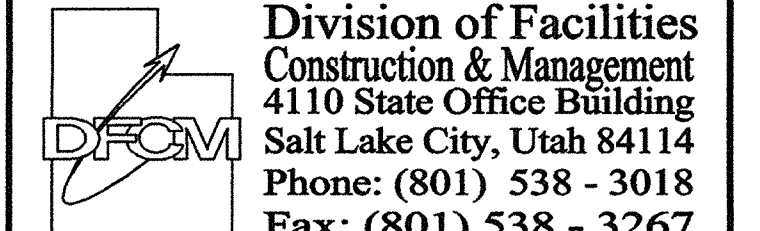
AB	ANCHOR BOLT
ABBR	ABBREVIATION
ADJ	ADJUSTABLE
ADH	ADHESIVE
AFF	ABOVE FINISHED FLOOR
ALUM	ALUMINUM
APPD	APPROVED
APPROX	APPROXIMATE
ASSY	ASSEMBLY
BF	BLIND FLANGE
BFL	BAFFLE
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BENCH MARK
BOT	BOTTOM
BR	BERM
BT	BOLT
CAP	CAPACITY
CB	CATCH BASIN
CC	CENTER TO CENTER
CFS	CUBIC FEET PER SECOND
CHK V	CHECK VALVE
CI	CAST IRON
CJ	CONSTRUCTION JOINT
CLR	CLEAR
CNR	CORNER
CO	CLEAN OUT
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCTION OR CONSTRUCT
CONT	CONTINUED OR CONTINUOUS
CONTR	CONTRACTOR
CTRL	CONTROL
CP	CORRUGATED METAL PIPE
CTR	CENTER
CUX	EXISTING UNDERGROUND CABLE
CYL	CYLINDER
DBL	DOUBLE
DET	DETAIL
DI	DUCTILE IRON
DIA	DIAMETER
DISCH	DISCHARGE
DR	DRAIN
DWG	DRAWING
DWR	DEPARTMENT OF WILDLIFE RESOURCES
E	EAST
EA	EACH
EB	EXPANSION BOLT OR ANCHOR
EF	EACH FACE
EFF	EFFLUENT
EL	ELEVATION
EOA	EDGE OF ASPHALT
EOC	EDGE OF CONCRETE
EQUIP	EQUIPMENT
EXP JT	EXPANSION JOINT
EXT	EXTERIOR
FABR	FABRICATION, FABRICATE OR FABRICATED
F TO F	FACE TO FACE
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FIG	FIGURE
FL	FLOWLINE
FOC	FACE OF CONCRETE
FOW	FACE OF WALL
FT	FEET OR FOOT
FT.LB	FOOT-POUND
FTG	FOOTING
FUT	FUTURE
GAL	GALLON
GEN	GENERAL
GPM	GALLONS PER MINUTE
GRD	GRADE OR GROUND
GR BRK	GRADE BREAK
GV	GATE VALVE
HGT	HEIGHT
HORIZ	HORIZONTAL
HP	HORSEPOWER
H/P	HIGH POINT
HWL	HIGHWATER LEVEL
HV	HORIZONTAL AND VERTICAL CONTROL POINT
HYD	HYDRAULIC
ID	INSIDE DIAMETER
IN	INCH
INFL	INFLUENT
INV	INVERT ELEVATION
IPP	IRON PIPE
ISP	INSULATED STEEL PANEL

ABBREVIATIONS (CONT.)

JB	JUNCTION BOX
JT	JOINT
LAT	LATERAL
L/P	LOW POINT
LB	POUND
LEV	LEVEL
LG	LENGTH OR LONG
LHO	LOW HEAD OXYGEN UNIT
LT	LEFT
LWL	LOW WATER LEVEL
LWR	LOWER
MAN	MANUAL
MFR	MANUFACTURER
MFR'D	MANUFACTURED
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOD	MODEL
N	NORTH
NG	NATURAL GRADE
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
OPNG	OPENING
PAVMT	PAVEMENT
PCC	PORTLAND CEMENT CONCRETE
PLACES	PLACES
PP	POWER POLE
PPM	PARTS PER MILLION
PR	PROPOSED RACEWAY
PRCT	PRECAST
PREFAB	PREFABRICATED
PRV	PRESSURE REGULATING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
QTY	QUANTITY
R	RADIUS
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RCWY	RACEWAY
RD	ROAD OR ROUND
REF	REFERENCE
REIN	REINFORCED
REQ'D	REQUIRED
RT	RIGHT
R/W	RIGHT-OF-WAY
S	SOUTH
SA	SAMPLE
SAT	SATURATION
SDR	STORM DRAINS
SECT	SECTION
SHT	SHEET
SPEC	SPECIFICATION
SS	SANITARY SEWER
SSX	EXISTING SANITARY SEWER
STA	STATION
STD	STANDARD
SWL	SWALE
SYS	SYSTEM
TC	TOP OF CURB
THK	THICK OR THICKNESS
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOW	TOP OF WALL
TP	TELEPHONE POLE
TRANS	TRANSION OR TRANSMITTER
UG	UNDERGROUND
UGC	UNDERGROUND CONDUIT
UNO	UNLESS NOTED OTHERWISE
V	VALVE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VOL	VOLUME
W	WEST OR WASTE
WS	WATER SURFACE
Wx	EXISTING WATERLINE
YD	YARD
YR	YEAR
Z	ZERO

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Department of Administrative Services



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CACHE VALLEY
HUNTER ED. CENTER
2851 W. SR-30
LOGAN, UTAH

PROJECT TITLE:

CACHE VALLEY
HUNTER EDUCATION
300 YARD RANGE
DESIGN



MARK	DATE	DESCRIPTION
		ISSUE TYPE: FINAL DRAWINGS

ISSUE DATE:

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CAD PROJECT NO: 57-05-020
CAD DWG FILE: G-002.DWG
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SHEET TITLE

LOCATION & VICINITY
MAP, INDEX SHEET

SHEET NUMBER

G-002

2



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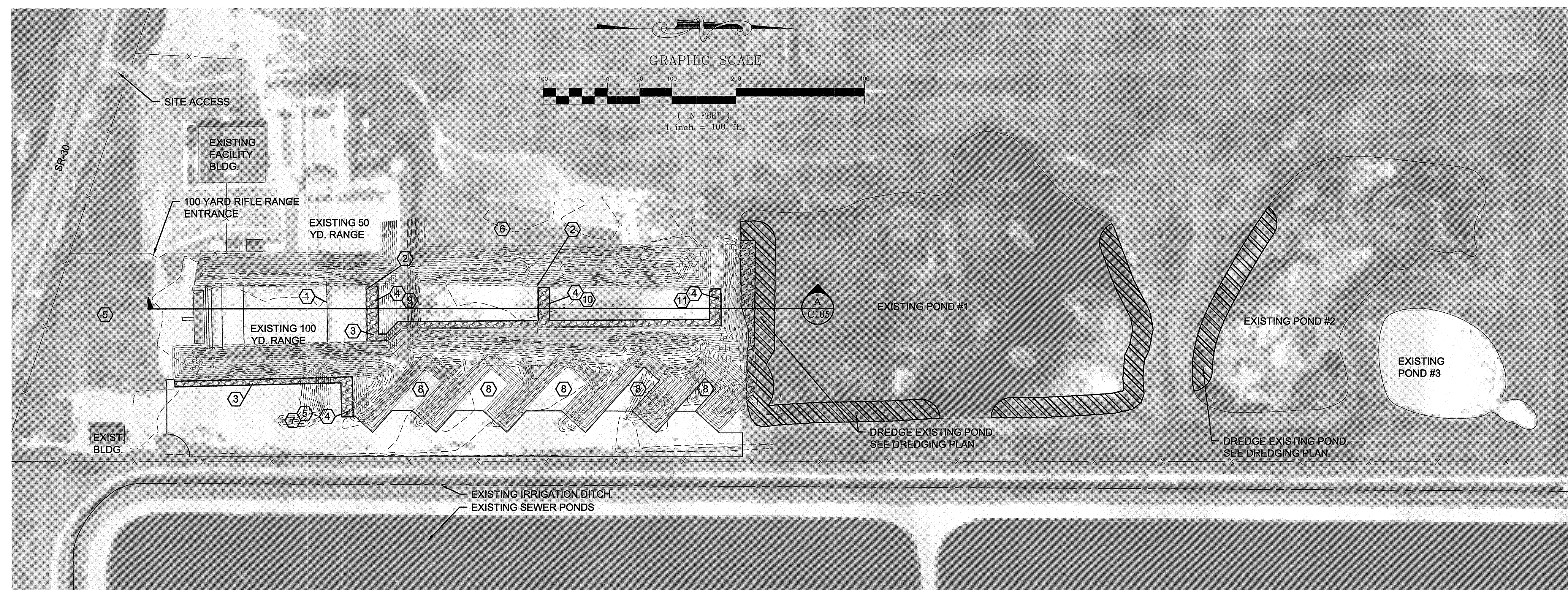
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SHEET TITLE

SITE PLAN

SHEET NUMBER

C-101

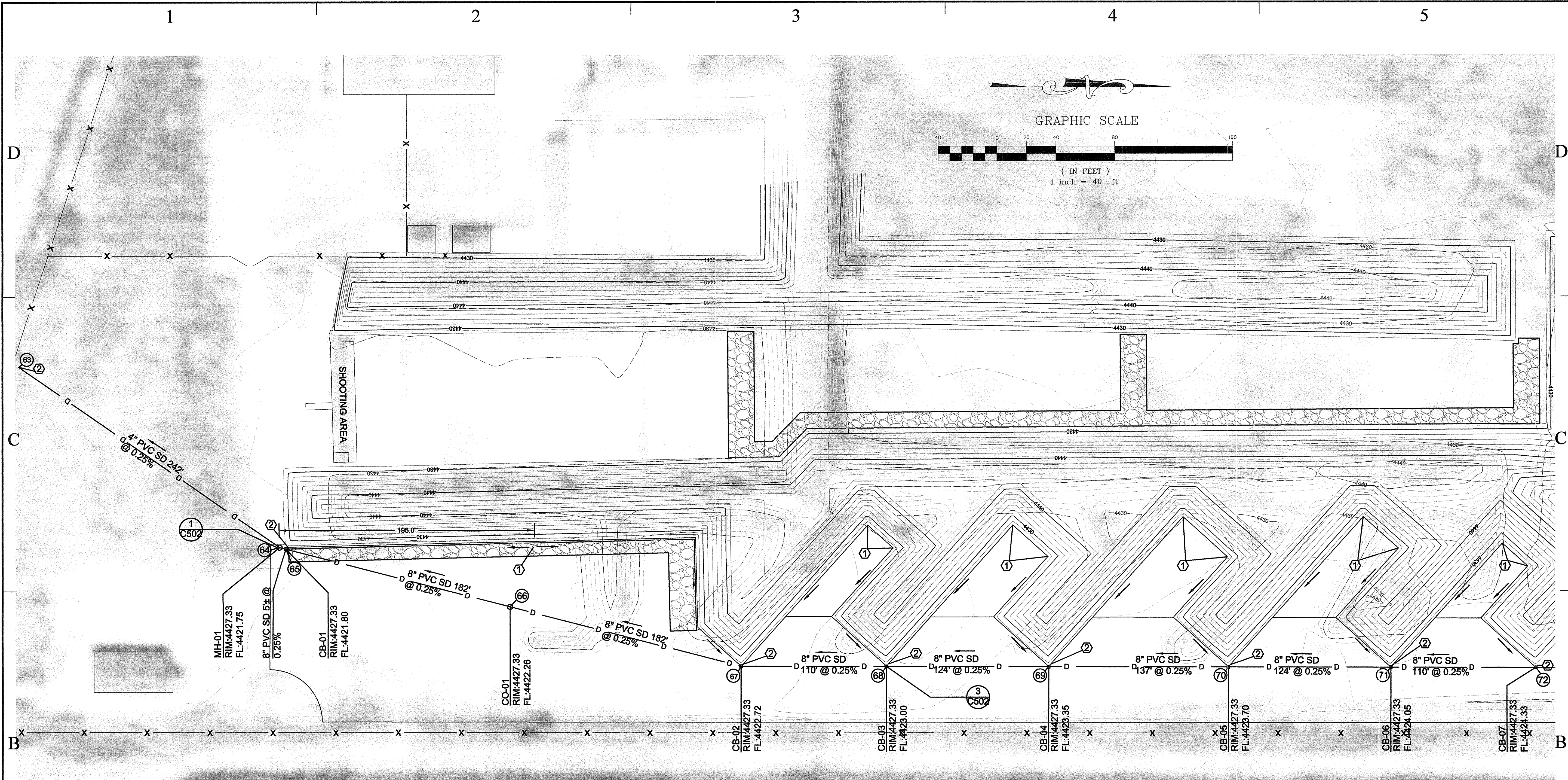


GENERAL NOTES

1. SEE GRADING PLAN FOR DIMENSIONS AND ELEVATIONS
2. CONSTRUCTION MUST COMPLY WITH ARMY CORP OF ENGINEERS PERMIT.

KEY NOTES

1. REFURBISH EXISTING BAFFLE PER DETAIL
1, SHEET C-501
2. INSTALL NEW BAFFLE
3. GRAVEL ACCESS PATH
4. INSTALL CONCRETE SIDEWALK W/
TARGET NOTCH. SEE SECTION B, SHEET
C-502
5. EXISTING MATERIAL STOCKPILE
6. STOCKPILE EXCESS MATERIAL
7. PROPOSED 100 YD. ARCHERY RANGE
8. PROPOSED 30 YD. PISTOL RANGE
9. PROPOSED 100 YD. RIFLE RANGE
10. PROPOSED 200 YD. RIFLE RANGE
11. PROPOSED 300 YD. RIFLE RANGE



GENERAL NOTES

1. GRADE EXISTING SLOPE INTO CATCH BASIN WITH MAX SLOPE=3:1. LEAVE LIP OF CATCH BASIN EXPOSED AS PER DET. 3 SHEET C-502.
- INDICATES SLOPE DIRECTION OF SWALE OR PIPE

KEY NOTES

1. FLOW LINE OF SWALE. ELEV.= 4428.00 HIGH POINT (TYP)
2. FLOW LINE OF SWALE. ELEV.= 4427.00 LOW POINT (TYP)
3. GRADE SWALE AT FOOT OF EARTH EMBANKMENT. SEE DET. A, SHEET C-501.
4. DAYLIGHT DRAIN LINE TO EXISTING DITCH, INSTALL RODENT SCREEN ON END OF PIPE.

CONSTRUCTION POINT TABLE				
PT.#	Northing	Easting	Elevation	Desc.
63	3793494.98	1530470.67		VIF DAYLIGHT
64	3793693.89	1530608.45	4421.75	MANHOLE FL
65	3793698.73	1530609.70	4421.80	CATCH BASIN FL
66	3793870.17	1530653.90	4422.26	CLEAN OUT FL
67	3794046.46	1530699.35	4422.72	CATCH BASIN FL
68	3794157.45	1530699.61	4423.00	CATCH BASIN FL
69	3794281.49	1530699.90	4423.35	CATCH BASIN FL
70	3794418.95	1530700.22	4423.70	CATCH BASIN FL
71	3794543.00	1530700.51	4424.05	CATCH BASIN FL
72	3794653.64	1530700.76	4424.33	CATCH BASIN FL

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SHEET TITLE

DRAINAGE PLAN

SHEET NUMBER

C-102



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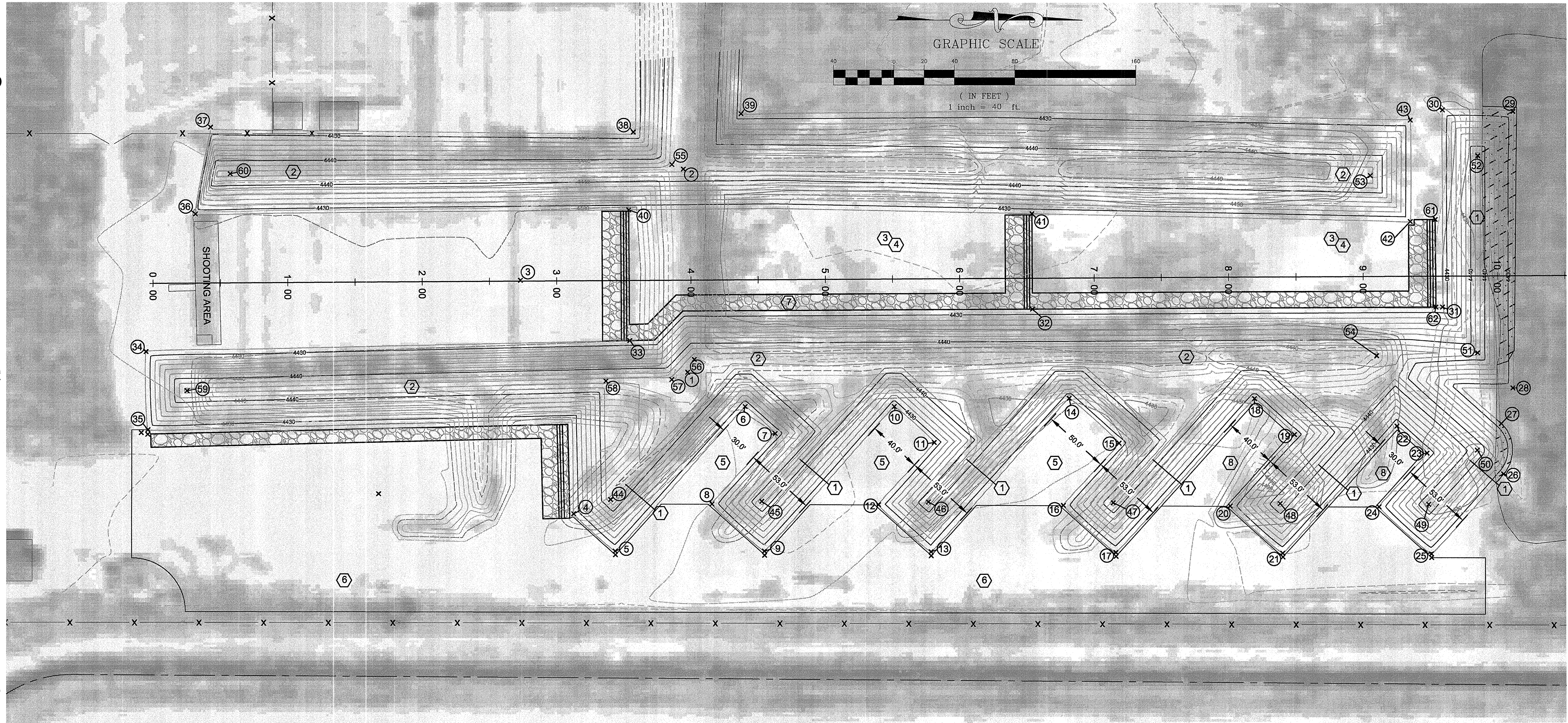
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GRADING PLAN

SHEET NUMBER

C-103



CONSTRUCTION POINT TABLE				
PT.#	Northing	Easting	Elevation	Desc.
1	3794100.19	1530563.54	4446.25	JUB-CTRL
2	3794096.98	1530412.23	4446.30	JUB-CTRL
3	3793975.59	1530495.06	4428.42	JUB-CTRL
4	3794015.37	1530668.71	4428.00	BERM-TOE
5	3794046.31	1530696.53	4428.00	BERM-TOE
6	3794143.00	1530588.97	4428.00	BERM-TOE
7	3794165.31	1530609.02	4428.00	BERM-TOE
8	3794118.25	1530661.37	4428.00	BERM-TOE
9	3794157.30	1530696.47	4428.00	BERM-TOE
10	3794253.99	1530588.90	4428.00	BERM-TOE
11	3794283.74	1530615.64	4428.00	BERM-TOE
12	3794242.30	1530661.74	4428.00	BERM-TOE
13	3794281.35	1530696.83	4428.00	BERM-TOE
14	3794384.01	1530582.63	4428.00	BERM-TOE
15	3794421.19	1530616.05	4428.00	BERM-TOE
16	3794379.76	1530662.14	4428.00	BERM-TOE
17	3794418.80	1530697.24	4428.00	BERM-TOE
18	3794521.80	1530582.67	4428.00	BERM-TOE
19	3794551.55	1530609.41	4428.00	BERM-TOE
20	3794503.81	1530662.51	4428.00	BERM-TOE
21	3794542.85	1530697.61	4428.00	BERM-TOE
22	3794627.93	1530602.97	4428.00	BERM-TOE
23	3794650.24	1530623.03	4428.00	BERM-TOE
24	3794614.44	1530662.84	4428.00	BERM-TOE
25	3794653.49	1530697.94	4428.00	BERM-TOE

CONSTRUCTION POINT TABLE				
PT.#	Northing	Easting	Elevation	Desc.
26	3794707.09	1530638.31	4428.00	BERM-TOE
27	3794705.37	1530600.95	4428.00	BERM-TOE
28	3794714.08	1530574.47	4428.00	BERM-TOE
29	3794714.08	1530368.57	4428.00	BERM-TOE
30	3794661.61	1530367.55	4428.00	BERM-TOE
31	3794661.64	1530514.27	4428.00	BERM-TOE
32	3794356.75	1530516.24	4428.00	GRAVEL PATH
33	3794057.09	1530539.88	4428.00	GRAVEL PATH
34	3793697.49	1530548.27	4428.00	BERM-TOE
35	3793698.84	1530606.33	4428.00	BERM-TOE
36	3793734.04	1530445.92	4428.00	BERM-TOE
37	3793745.37	1530381.12	4428.00	BERM-TOE
38	3794059.65	1530384.62	4428.00	BERM-TOE
39	3794139.83	1530370.90	4428.00	BERM-TOE
40	3794056.27	1530442.70	4428.00	GRAVEL PATH
41	3794356.30	1530445.34	4428.00	GRAVEL PATH
42	3794637.64	1530450.84	4428.00	BERM-TOE
43	3794637.64	1530375.08	4428.00	BERM-TOE
44	3794042.85	1530658.12	4443.00	BERM-TOP
45	3794155.32	1530659.39	4443.00	BERM-TOP
46	3794279.37	1530659.76	4443.00	BERM-TOP
47	3794416.83	1530660.17	4443.00	BERM-TOP
48	3794540.88	1530660.54	4443.00	BERM-TOP
49	3794651.52	1530660.87	4443.00	BERM-TOP
50	3794687.57	1530620.76	4443.00	BERM-TOP

CONSTRUCTION POINT TABLE				
PT.#	Northing	Easting	Elevation	Desc.
51	3794687.86	1530548.28	4443.00	BERM-TOP
52	3794687.89	1530401.56	4443.00	BERM-TOP
53	3794607.89	1530416.50	4445.00	BERM-TOP
54	3794612.76	1530550.59	4445.00	BERM-TOP
55	3794088.44	1530408.85	4445.00	BERM-TOP
56	3794105.18	1530553.97	4445.00	BERM-TOP
57	3794088.38	1530568.91	4445.00	BERM-TOP
58	3794039.34	1530570.06	4445.00	BERM-TOP
59	3793727.92	1530577.31	4445.00	BERM-TOP
60	3793759.94	1530415.91	4445.00	BERM-TOP
61	3794656.32	1530449.30	4428.00	GRAVEL PATH
62	3794656.74	1530514.30	4428.00	GRAVEL PATH

GRADING VOLUMES				
LOCATION	MATERIAL	IMPORT	VOL./WT.	CY./TON
RANGE BERMS	S2	NO	26200	CY
200/300 YD. RANGE FLOOR	S2	NO	1800	CY
ACCESS PATHWAY	A4	YES	935	TON
ACCESS PATHWAY	A2	YES	315	TON
PISTOL RANGE FLOOR	A4	YES	300	TON
PISTOL RANGE FLOOR	A2	YES	100	TON
ROADWAY GRADING	A2	YES	1315	TON
ALTERNATE #2 RANGE FLR	A4	YES	2025	TON
ALTERNATE #2 RANGE FLR	A2	YES	675	TON
RIP RAP	A3	YES	365	TON

KEY NOTES

- GRADE 15' TALL EMBANKMENT.
- GRADE 17' TALL EMBANKMENT.
- COVER AND GRADE FIRING RANGE FLOOR WITH STOCKPILED MATERIAL.
- ALTERNATE #2: COVER EXISTING RANGE FLOOR WITH 12" MIN. GRAVEL TYPE A4 AND 4" TYPE A2.
- MAINTAIN EXISTING RANGE FLOOR.
- REGRADE AREA W/ 3" AGGREGATE A2.
- GRAVEL ACCESS PATH. SEE SEC. A, SH. C-103
- SEE SEC. A, SH. C-103 FOR RANGE FLOOR CONSTRUCTION.



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DREDGING PLAN

C-104



1. EXTEND EMBANKMENT INTO EXISTING POND, WHERE NECESSARY. SEE DETAIL 2, SHEET C-503
2. AVOID DREDGING IN AREAS DIRECTLY IMPEDED BY CATTAILS AND OTHER WETLAND VEGETATION.

[illegible]



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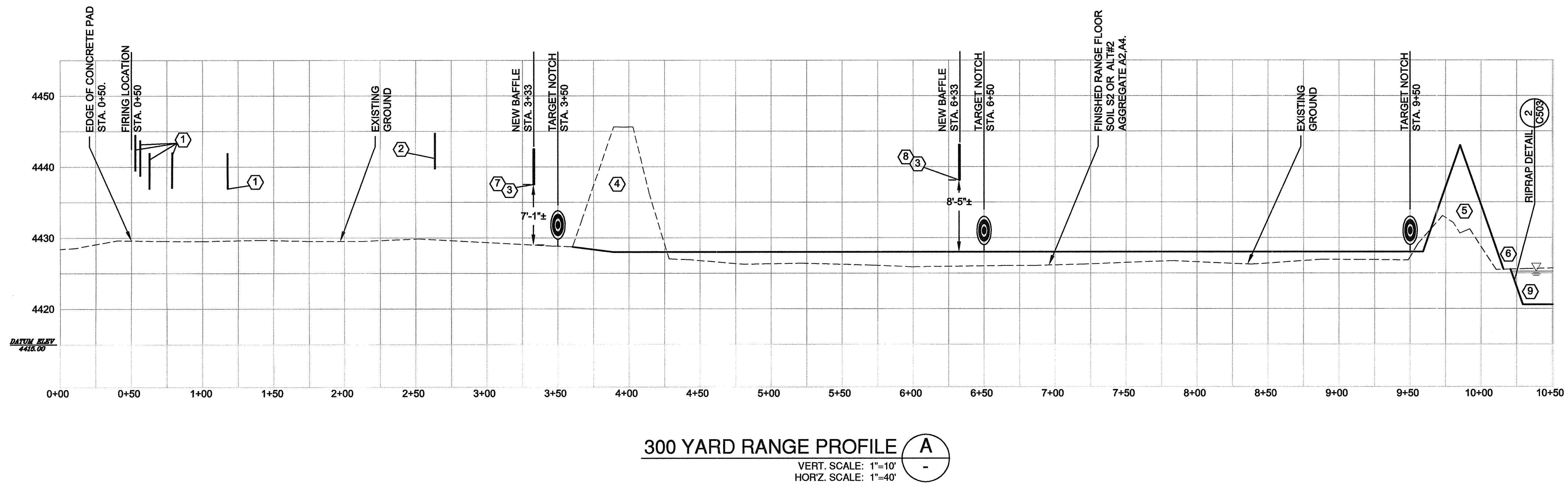


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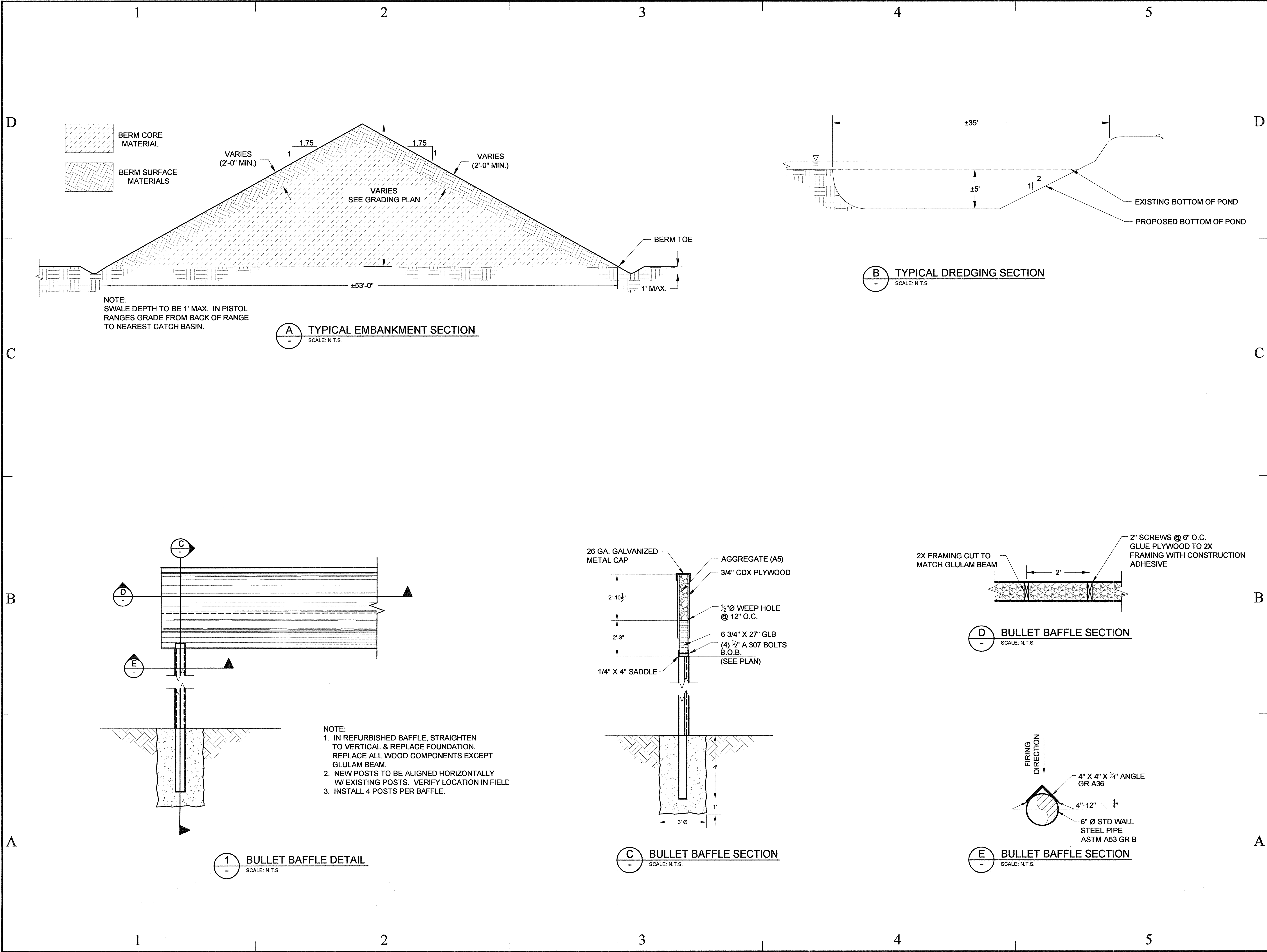
300 YARD RANGE PROFILE

C-301



1. COORDINATE FINAL DISTANCES & STATIONS WITH OWNER

1. EXISTING BAFFLE TO REMAIN
2. REFURBISH EXISTING BAFFLE AND FOUNDATION/FOOTING SYSTEM. SEE DET. 1, SHEET C-501.
3. FURNISH AND INSTALL NEW BAFFLE. SEE DET. 1, SHEET C-501.
4. REMOVE EXISTING EARTH EMBANKMENT.
5. INSTALL EARTH EMBANKMENT. SEE SECTION A, SHEET C-501
6. EXTEND EMBANKMENT INTO EXISTING POND
7. BOTTOM OF BAFFLE ELEVATION TO BE 4437.30. FIELD VERIFY.
8. BOTTOM OF BAFFLE ELEVATION TO BE 4438.40. FIELD VERIFY.
9. DREDGE EXISTING POND. SEE DREDGING PLAN



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300 YARD RANGE

DESIGN

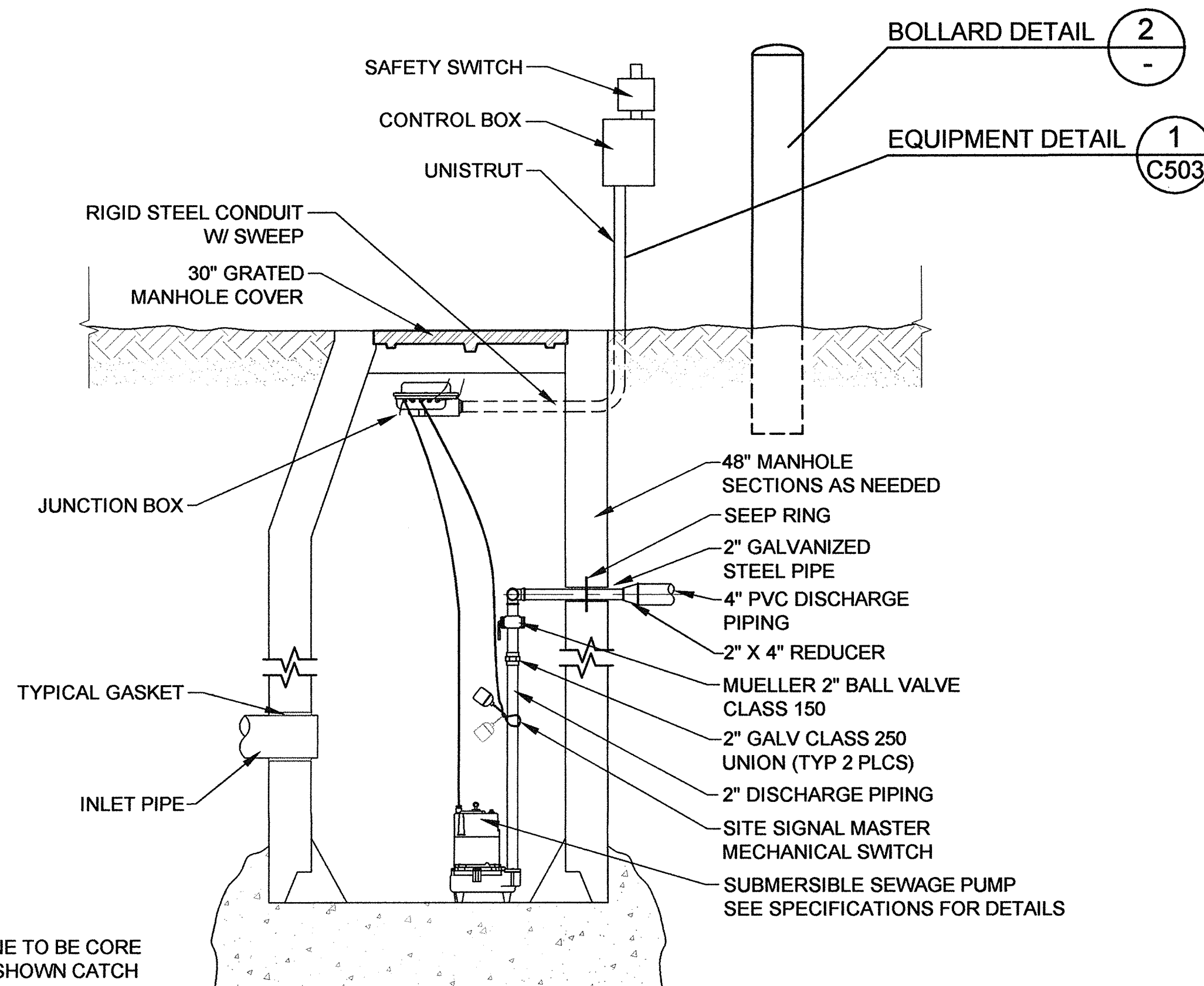
REGISTERED PROFESSIONAL ENGINEER

235814-2202

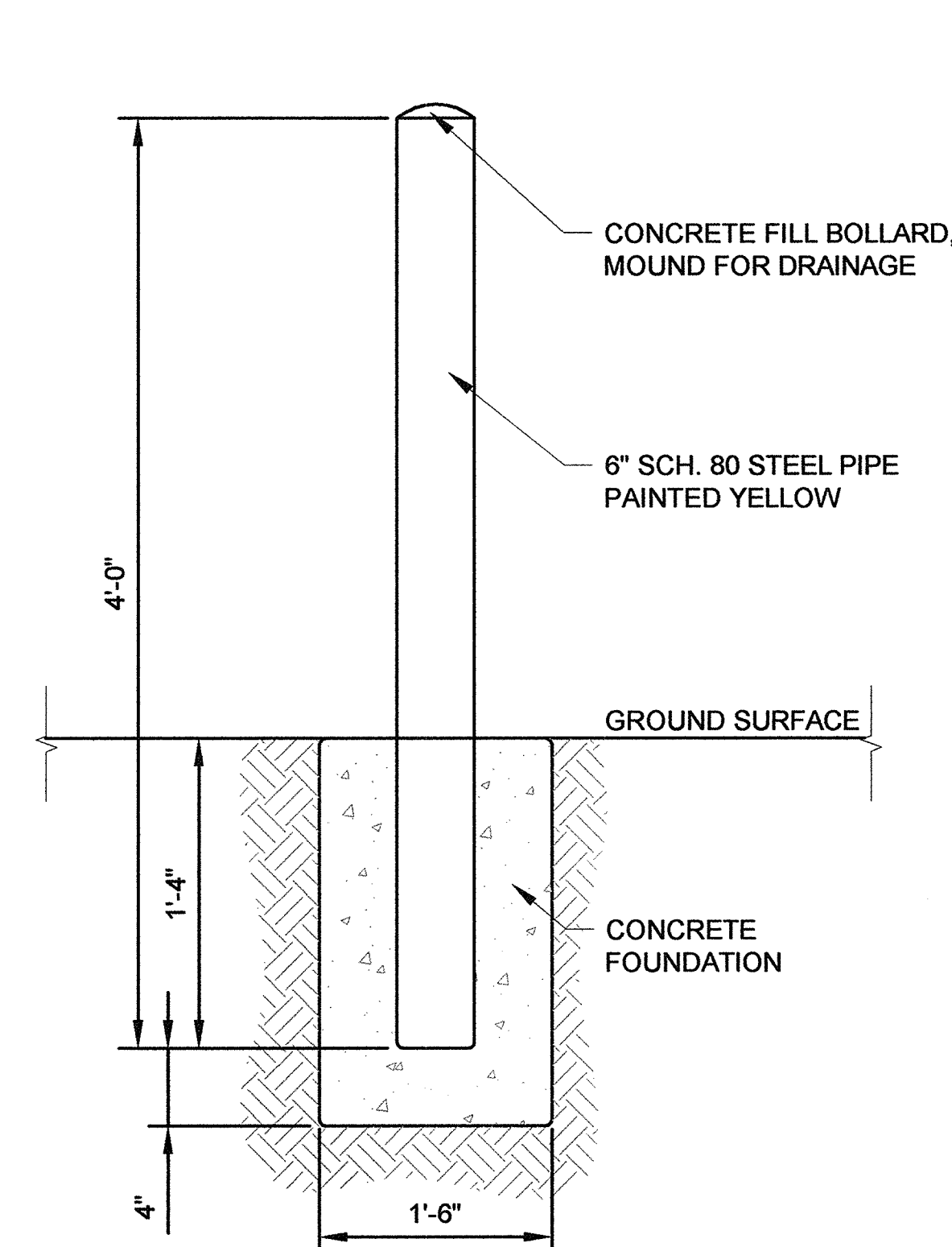
ZAN R. MURRAY

STATE OF UTAH

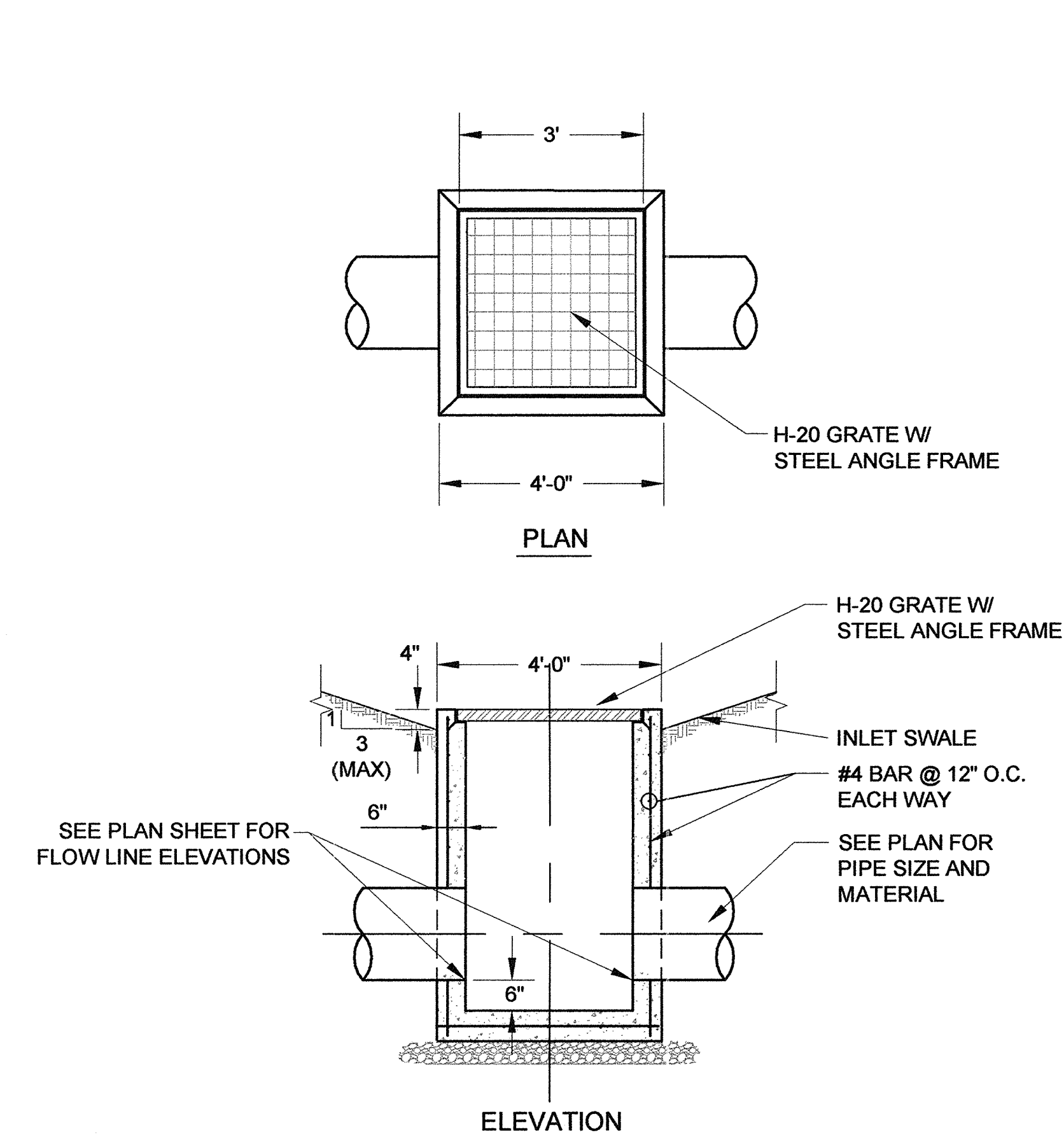
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ISSUE TYPE: FINAL DRAWINGS		
ISSUE DATE:		
DFCM PROJECT NO: 06048520		
CAD PROJECT NO: 57-05-020		
CAD DWG FILE: C-DT01		
DRAWN BY: JP		
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SHEET TITLE		
DETAILS		
SHEET NUMBER		
C-501		



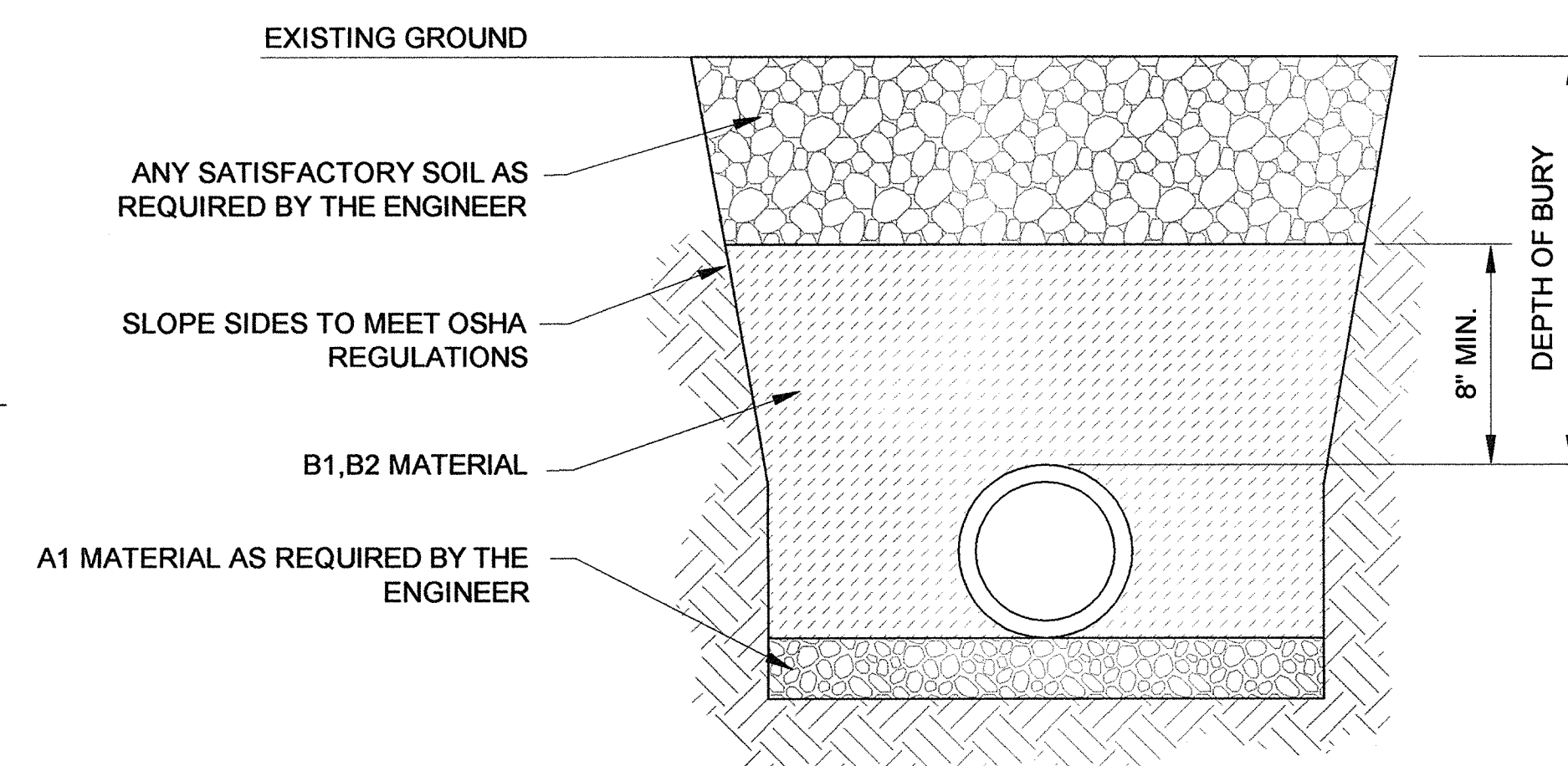
1 DRAIN SYSTEM PUMP STATION DETAIL
- SCALE: N.T.S.



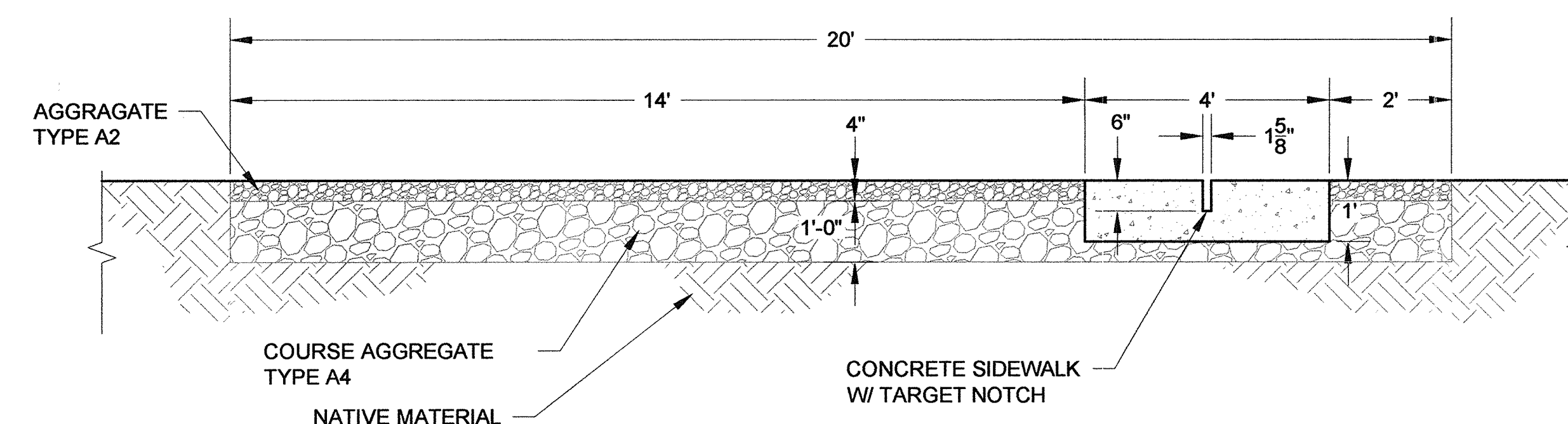
2 BOLLARD DETAIL
- SCALE: N.T.S.



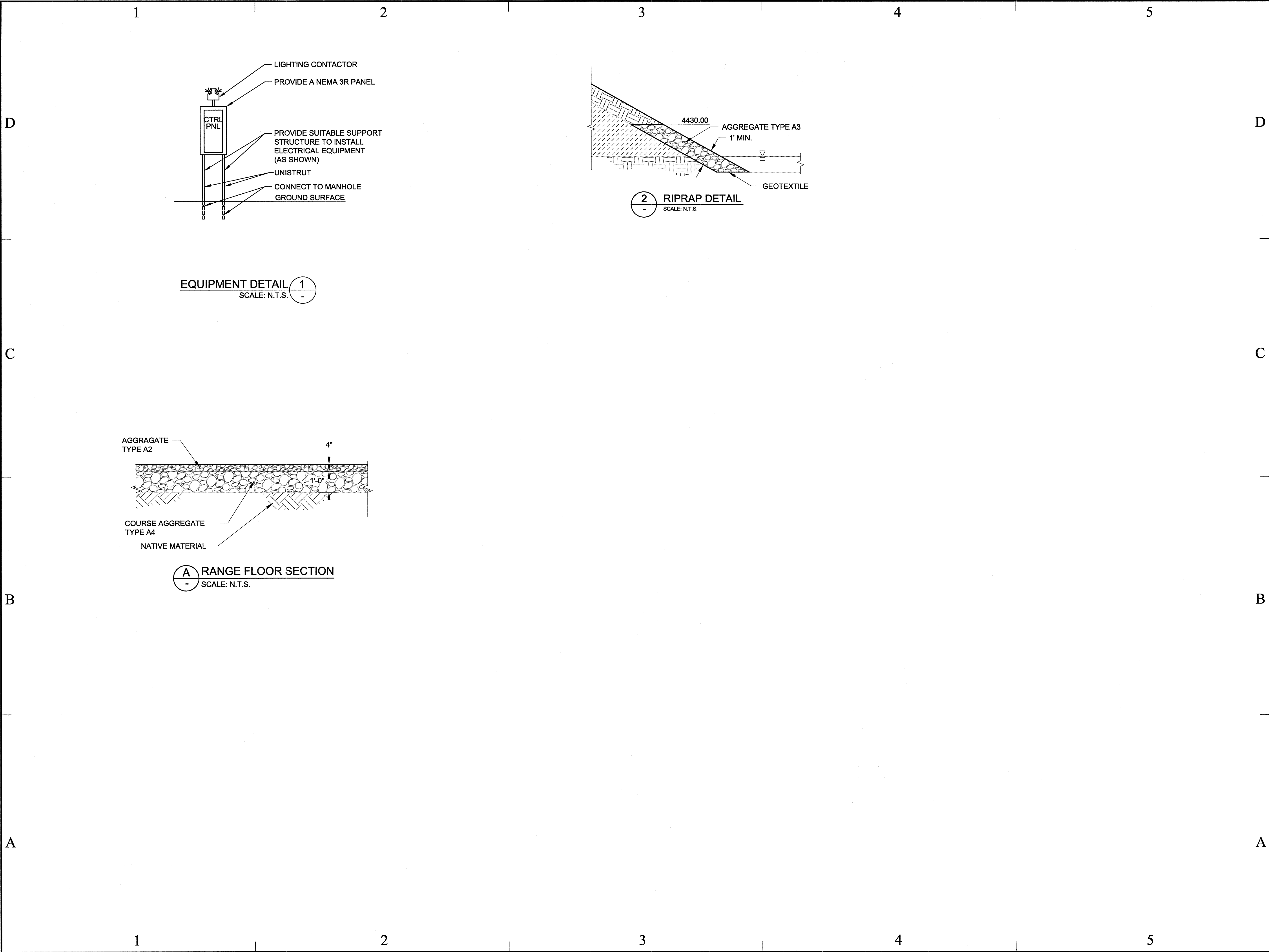
3 3' x 3' CATCH BASIN DETAIL
- SCALE: N.T.S.



A TRENCH SECTION
SCALE: N.T.S.



B TARGET PATH SECTION
- SCALE: N.T.S.



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BUILDING NAME:

**RM# 07477
CACHE VALLEY
HUNTER ED. CENTER
2851 W. SR-30
LOGAN, UTAH**

PROJECT TITLE:

**CACHE VALLEY
HUNTER EDUCATION
300 YARD RANGE
DESIGN**



MARK	DATE	DESCRIPTION
ISSUE TYPE: FINAL DRAWINGS		
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DFCM PROJECT NO: 06048520		
CAD PROJECT NO: 57-05-020		
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SHEET TITLE

DETAILS

SHEET NUMBER

C-503

D

C

B

A

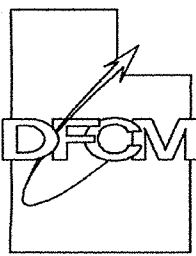
SERVICE ENTRANCE & FEEDER CONDUIT-CONDUCTOR SCHEDULE					
TYPE	CONDUCTOR		COND	AMP	INSUL- ATION
	QUAN.	SIZE	SIZE		
20	2	10	3/4	30	THHN, THWN, XHHW
30	3				
40	4				
28	2	8		40	
38	3				
48	4		1		
26	2	6		55	
36	3				
46	4				
34	3	4	1 1/4	70	
44	4				
33	3	3	1 1/4	85	
43	4				
311	3	1	1 1/2	110	
411	4				
310	3	1/0		150	
410	4		2		
320	3	2/0		175	
420	4				
330	3	3/0		200	
430	4				
340	3	4/0		230	
440	4		2 1/2		
325	3	250		255	
425	4		3		
335	3	350		310	
435	4				
350	3	500		380	
450	4		3 1/2		

PANEL 2A		<input checked="" type="checkbox"/> NEW	TYPE LOAD CENTER		1	Ø	3	WIRE	120/240	VOLTS	LOCATION	MOUNTING											
		<input type="checkbox"/> EXISTING	REMARKS									<input type="checkbox"/> flush	<input checked="" type="checkbox"/> surface										
		<input type="checkbox"/> Bolt on breakers										<input type="checkbox"/> 100 amp. main											
		<input type="checkbox"/> Isolated ground bus										<input type="checkbox"/> lugs	<input checked="" type="checkbox"/> breaker										
No.	BRKR.	A	P	CIRCUIT DESCRIPTION	L	O	M	WIRE	CIRC. LOAD	Phase	Loads	CIRC. LOAD	WIRE	L	O	M	CIRCUIT DESCRIPTION	BRKR.	A	P	No.		
1	20	1		TARGET OUTLETS			3		240		240						SPARE	20	1		2		
3				CANOPY LIGHTS	8		12		1200		1200										4		
5				10 YD/25 YD SPOTS	8		12		1200		1200										6		
7				95 YD SPOTS	6		8		900		900										8		
9	20	2		95 YD FLOODS	3		10		776		776										10		
11									776		776										12		
13	20	2		200 YD FLOODS	3		8		776		776										14		
15									776		776						SPACE				16		
17	20	1		SHOOTING BENCH OUTLETS	2		12		360		360										18		
19				SPARE																	20		
21																					22		
23																					24		
					TOTALS					3352		3652						AIC					10000
FEEDER: 311					AMPS/PHASE					28		30						parallel runs					1

GENERAL NOTES

- THE ELECTRICAL CONTRACTOR SHALL HAVE A COORDINATION MEETING WITH THE MECHANICAL CONTRACTOR, CONSTRUCTION SUPERINTENDENT AND ANY OTHER TRADES AS REQUIRED WITHIN SEVEN DAYS OF THE START OF THE JOB TO REVIEW CODE CLEARANCE REQUIREMENTS FOR PANELS, SWITCHES AND OTHER ELECTRICAL GEAR SPECIFICALLY FOR THIS JOB. RECORD THE MEETING IN THE SUPERINTENDENT'S LOG. REPORT UNRESOLVED CONFLICTS TO THE ARCHITECT IMMEDIATELY.
- ALL ELECTRICAL INSTALLATIONS TO CONFORM TO THE LATEST N.E.C. AND LOCAL CODES.
- ELECTRICAL CONTRACTOR SHALL FURNISH ALL MOTOR DISCONNECTS, STARTERS, AND CONTROL STATIONS FOR MECHANICAL EQUIPMENT UNLESS THE SAME IS FURNISHED AS AN INTEGRAL PART OF THE EQUIPMENT. VERIFY WITH MECHANICAL CONTRACTOR.
- EMT CONDUIT IS NOT ALLOWED OUT OF DOORS, SEE SPECIFICATION SECTION ON RACEWAYS.
- MOUNTING HEIGHT OF GENERAL PURPOSE OUTLETS AND SWITCHES SHALL BE 16" TO BOTTOM AND 48" TO TOP RESPECTIVELY UNLESS OTHERWISE NOTED.
- A GFI OUTLET SHALL BE INSTALLED AT EACH LOCATION DESIGNATED BY "GFI" ON THE DRAWINGS. DOWNSTREAM PROTECTION BY A GFI OUTLET UPSTREAM IS NOT ALLOWED.
- PROVIDE FACTORY RECOMMENDED LAMPS IN ALL HID FIXTURES.
- DO NOT SCALE ELECTRICAL FLOOR PLANS. SEE ARCHITECTURAL DRAWINGS FOR ACCURATE DIMENSIONS AND FLOOR PLANS.
- ALL CONVENIENCE OUTLETS MUST BE MOUNTED FLUSH WITH THE COVER PLATE AND SECURED FIRMLY TO THE OUTLET BOX. LOOSE OR SPONGY MOUNTED OUTLETS WILL NOT BE ACCEPTED.

State of Utah
Department of Administrative Services



Division of Facilities
Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114
Phone: (801) 538 - 3018
Fax: (801) 538 - 3267

Internet: <http://dfcm.utah.gov>

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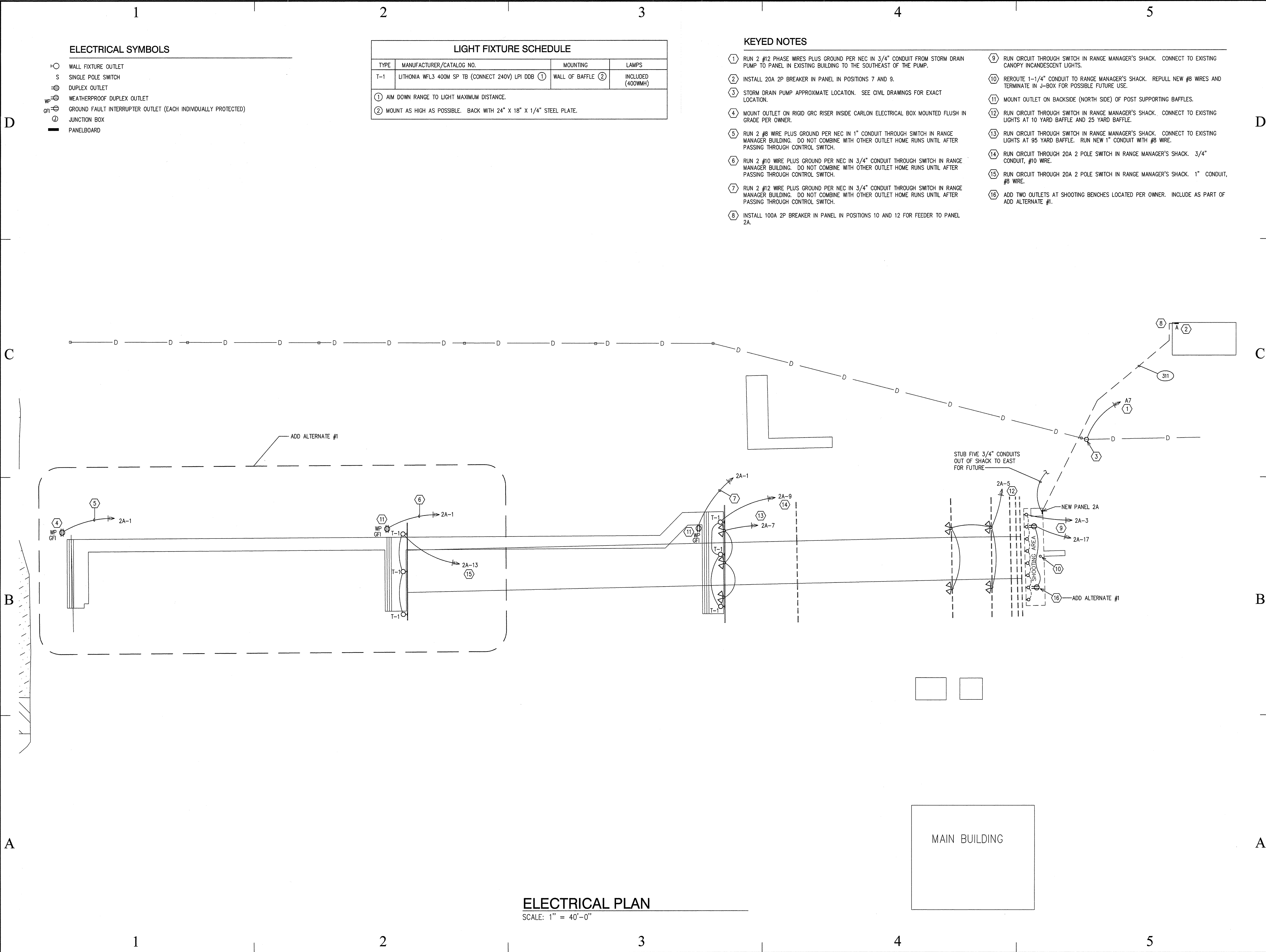
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ELECTRICAL
NOTES, SCHEDULES

SHEET NUMBER

E001



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ELECTRICAL PLAN		
SHEET NUMBER		
E101		